Adoption of ChatGPT and the future of Libraries

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ABSTRACT

This paper provides an overview of ChatGPT and the future of libraries. With all the technological advances that have changed the way we live and work, artificial intelligence has been a major force behind these changes. The introduction of OpenAI's ChatGPT has opened a world of new possibilities. Artificial intelligence plays a key role in today's technology, working behind the scenes to simulate human intelligence and help us with many things. The academic and research libraries will adopt new technology and try to improve their services and gain a competitive advantage with ChatGPT and other AI apps. This study investigates the adoption of ChatGPT for the future of libraries. Moreover, the research questions were designed in relation to the statement of the problem and the objectives of the research, which were also observed accordingly. Based on the findings thus far, ChatGPT will never be able to replace current human delivery. Artificial intelligence plays a key role in today's technology, working behind the scenes to simulate human intelligence and help us with many things, but it will not harm the future of libraries. These face-to-face interactions (whether in person or online) and community relationships are also what many patrons long for and enjoy in libraries today. Furthermore, due to the very unusual "valley effect," researchers doubt that there is enough incentive in the industry to create robots that could replace librarians in their functions. Finally, artificial intelligence (AI) will not be able to compete with human intelligence, like libraries.

KEYWORDS: ChatGPT, Libraries, Artificial Intelligence, Future.

INTRODUCTION

Advances in innovative technology have shaped the way we consume, use, process, and share information. Academic and research libraries implement new technologies and seek to improve their services and increase their competitive advantage. The main force behind this change was artificial intelligence. Internet, smartphone, Google All technological advances have changed the way we live and work. On November 30, 2022, Open AI launched ChatGPT, an AI-based chat that uses software that mimics human conversation and can create original content based on simple or complex prompts. Many people wonder where libraries are headed in an information age where the

only constant is change (Kim Leeder 2013). The advent of ChatGPT OpenAI has created many new opportunities. The human reactions to the AI-powered chatbot have encouraged many developers to keep coming up with new use cases. Almost every aspect of online communication today is connected to a chatbot. Google Chrome is one of the most popular web browsers, and now it has many extensions that allow users to use ChatGPT whenever they want. OpenAI, an AI research firm, announced ChatGPT earlier this year, a prototype conversational AI chatbot that can understand and respond in natural language. Some have even called it a replacement for Google because of its ability to solve complex problems head-on, almost like an all-knowing personal teacher.

However, the current definition of a library goes beyond the physical building and now focuses on the collections and services it offers, as virtual libraries have no physical walls and services can be provided to users remotely. In an effort to meet the dynamic information needs of their customers while maintaining their relevance in this ever-changing technological society, libraries have explored, integrated, and experienced various technological revolutions, including clay tablets, stone, papyrus, parchment, paper, microformats, computers, online virtual libraries, library 2.0, cloud computing, etc., in full metamorphosis. It should be noted that AI is a modern technology that is thriving with great potential and prospects for applications in libraries. As stated by Corker (2013), artificial intelligence systems (robots) will be an important technology in this century, so it is necessary to study this technology, its benefits, and its drawbacks in order to maximize its rich benefits for the delivery of innovative and optimal services in libraries. Virtual libraries are electronic libraries that provide access to information resources that are distributed electronically to remote users.

RESERCH QUESTIONS

1. What should libraries look like in the future as ChatGPT evolves?
2. How can we overcome obstacles such as feasibility issues and competing interests to realize the future of libraries with ChatGPT?
3. What will it mean for people working in libraries?

OBJECTIVES

The study seeks to:

✓ Ascertain the advancement of ChatGPT adoption and the future of libraries.
✓ Identify challenges that hinder the competing interests needed to realise the future of libraries with the advent of ChatGPT.
✓ Discover the extent to which ambiguous tools will be used in the future by library workers.

THE FUTURE OF LIBRARIES

This article is based on the fact that the impact of ChatGPT, artificial intelligence, and advanced information technology on the nature of future libraries will be enormous, and the qualitative differences will be different than what our current work expects. In addition, it underscores the need for changes in libraries in the context of the advent of the knowledge-based economy. With amenities like cafes, free Wi-Fi, and creative spaces, libraries bring people back to the real world. Additionally, the "walls" of the library extend beyond physical space, with online resources, social media, crowdsourcing, and mobile services transforming the way collections and services are accessed and shared on the go. However, these trends are not consistent across regions, countries, and contexts.

Even in developed regions, not all libraries are able to make the changes necessary to survive and thrive over the long term. Smaller and more local libraries face obvious threats from underfunding and the crowding out of online services. Despite these risks and uncertainties, the trends shaping the future of libraries have the potential to transform and reinvigorate the roles they play in the public, academic, and business communities. We focus on ways to use technology and the benefits the library can bring to libraries.
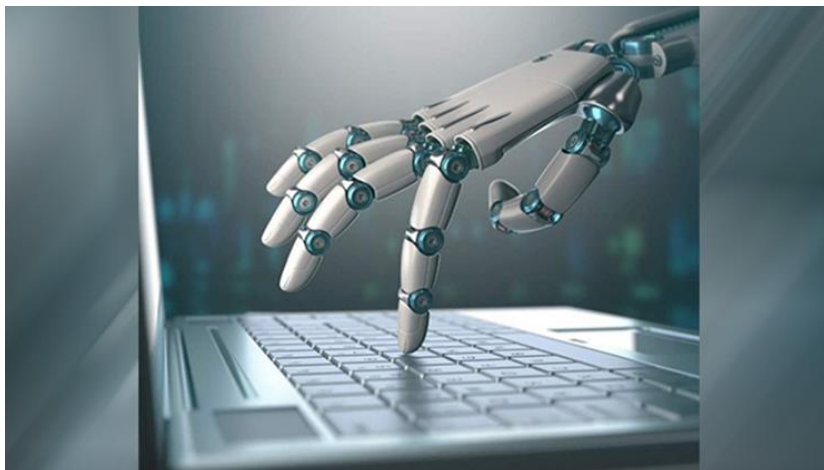
Definitions

ChatGPT is making waves in various online spaces and is the most advanced chat room to date that can answer complex questions and perform many complex tasks. This revolutionary conversation goes beyond what is expected from generative artificial intelligence. Open AI, an American artificial intelligence research company, is behind ChatGPT. Besides ChatGPT being a hot topic, their text-to-image generator DALL.E 2 has also been the talk of many platforms recently. ChatGPT is built with an improved version of GPT-3, which is also an advanced artificial intelligence model using language processing developed by OpenAI. The bot can remember earlier comments in a conversation and recount them to the user (Zohaib Ahmed 2022)

According to Utsav Sarkar (2023), "ChatGPT" is an e-book that provides a comprehensive overview of the state-of-the-art Open Artificial Intelligence ChatGPT language model. From the principles of artificial intelligence (AI) and natural language processing (NLP) converter design to the nuances of the fine-tuning procedure, the e-book covers a wide range of topics. It also examines how ChatGPT can be used in real-world scenarios for things like language translation, text production, and summarization. In addition to the Technical Overview, the e-book also discusses the limitations of ChatGPT and ethical issues related to AI, emphasizes the importance of implementing AI responsibly, and summarizes the main points of the book. In the end, the e-book is an outlook on the future of ChatGPT and artificial intelligence, a list of references, and further reading. However, "ChatGPT" is a wonderful resource for anyone interested in learning more about this fascinating technology because it is written in an approachable and interesting manner. This e-book provides timely and current knowledge, whether you are a student, professional, or simply an interested reader. Research libraries have gone through dramatic changes since the late 1960s. (Thomas Lidman 2008)

"ChatGPT the Future of Intelligent Conversation" is a must-read for everyone interested in the potential and potential applications of AI, according to Cea West (2023). This ground-breaking work examines the cutting-edge ChatGPT model of natural language processing (NLP) created by OpenAI and discusses the technological and moral implications of deploying AI in human-machine interaction. With the support of a virtual library that feels nearly

human, we can now engage insightful and interesting conversations thanks to the introduction of ChatGPT. Learn more about ChatGPT's internal workings, its prospects and limitations, and the potential effects it might have on many businesses. Reuben Davis (2023) ChatGPT: Exploring the Big Language Model in Depth" is a comprehensive guide to understanding and using the features of the state-of-the-art language model developed by OpenAI. Cynthia Steinke (2019) mentioned that, as automation. and competitiveness between companies and countries increases, the need for rapid research and information transfer grows as never before Technology transfer is defined as "the process of technical information, ideas, services, inventions and products reaching from their origin everywhere. It is possible to practice and research the role of the information specialist in the technology transfer process. Information brokers from a federal information centre, academic research centres, and a sizable metropolitan public library discuss it together

Significant of ChatGPT Concepts

❖ **Neural networks** employ an attention mechanism to enable models to concentrate primarily on particular parts of input data while generating predictions (Niu et al., 2021).

❖ **Unsupervised Pre-Training:** In unsupervised pre-training, a model is trained on a sizable dataset without any labeled instances so that it may discover the underlying structure and patterns in the data (Lee et al., 2018).

❖ **Generative Pre-Trained Transformer (GPT)** is a machine learning model that employs supervised and unsupervised learning strategies to comprehend and produce language that is similar to that used by humans (Radford et al., 2018).

❖ **A neural network** is a type of machine learning model made up of linked processing nodes that can be taught using data to carry out certain tasks by varying the strength of their connections (Bishop, 1994).

❖ **Generative Models:** In contrast to algorithms that merely classify or forecast based on input data, generative models also produce new data (Pavlik, 2023).

❖ **An artificial intelligence model** known as a language model has been trained to produce text that is comparable to human language (MacNeil et al., 2022).

❖ **Natural Language Processing:** In the subject of artificial intelligence known as "natural language processing," algorithms are used to analyze and interpret human language, such as text and voice, in order to derive meaning and glean pertinent information (Manning & Schutzer, 1999).

❖ **A pre-trained model** is subsequently trained on a smaller, labeled dataset using the machine learning approach known as supervised fine-tuning in order to enhance its performance on a particular task (Lee et al., 2018).

❖ **Transfer Learning:** Transfer learning is the capability of tools like ChatGPT to use the knowledge gained from one task in order to improve its performance on another, related task (Pan & Yang, 2010).

Pre-requisite of the ChatGPT

❖ **Google Bard** is an AI chatbot that can communicate with users via a language model. Bard uses the Language Model for Dialogue Applications (LaMDA) as its model, although it will initially use a simplified version of the giant language model for initial testing. Bard is designed for conversation. This means users interact with it by typing a query or request into a text field, and then the AI (in this case, Google Bard) responds with a conversational tone.

❖ **A chatbot** is a computer program that mimics human communication by using artificial intelligence (AI) and natural language processing (NLP) to interpret client questions. Chatbots can make it easier for users to find the

information they need by answering their questions and requests (via text input, audio input, or both) without human intervention. Chatbot technology can be found almost everywhere these days, from smart speakers in the home to messaging apps in the workplace.

❖ **The chatbot** is also a computer program that simulates and processes human conversation (either written or spoken), allowing humans to interact with digital devices as if they were communicating with a real person. Chatbots can be as basic as one-line programs that respond to straightforward queries, or they can be as complicated as digital assistants that learn and develop over time to provide ever more individualized service as they acquire and process more data.

While Microsoft CEO Satya Nadella was more forthright in stating that "AI will fundamentally change every software category," Bill Gates praised ChatGPT as being on par with the creation of the Internet in terms of importance. Microsoft has rapidly incorporated ChatGPT into its own search engine Bing and Edge browser as a significant investor with tens of billions of dollars invested in OpenAI, with plans to expand to Teams, Office, and other office applications. Overnight, its information or understanding by more than 80 billion dollars.

Google Stock vs. Microsoft Stock after both AI Presentations

ChatGPT and the Challenge of Artificial Intelligence

According to The Indian Express Journalism of Courage (2023), ChatGPT demonstrates the need for innovation in education, regulation, and work rules. Governance and technology must be more closely integrated. The terms "fourth industrial revolution," "artificial intelligence (AI)," and "internet of things" have entered the language of politicians, bureaucrats, consultants, and political analysts at least since 2015, when Klaus Schwab first coined the phrase at the World Economic Forum. With the release of Open AI ChatGPT late last year, future shifts in the nature of employment, creativity, and economics became an immediate issue for the futuristic jargon. The changes inevitably brought about by new technology must be responded to by rapid adaptations in the wider national and international legal and political architecture. Lessons can be learned from the gap between technological advancement and policy, as witnessed by the emergence of big data and social media. a case of recent occurrences: Microsoft incorporates the robot into its search engine, Bing, and other businesses. In Colombia, a court used his

interaction with ChatGPT as evidence in a decision. Google is said to be trying to launch a similar tool, and it has been reported that entry-level engineers at Google can already code ChatGPT. All of this is a result of concerns about plagiarism in academic settings and elsewhere, as well as concerns that many white-collar workers may lose their positions as AI advances and becomes more pervasive.

Concerns about the influence of social media on politics and society have risen sharply following the 2016 US presidential election and allegations of voter manipulation by foreign agents. India has been grappling with privacy issues and data regulation for at least half a decade. The AI revolution is likely to have serious implications for work, education, the authenticity of the content and its creator, and more. Envisioning possible futures requires a commitment to ChatGPT's heralded opportunities and challenges. Part of that is regulation that doesn't stifle innovation. But it is equally important to map and plan the required changes in the education system, labour laws, and the resulting new goods. If done with some success, India's demographic dividend—its large young and working-age population—can be exploited for decades. Failure to do so on time will result in heavy taxation. According to Ahmed Z. (2023), OpenAI is familiar with these shortcomings and has made mention of them on its announcement blog: "ChatGPT occasionally writes plausible-sounding but erroneous or nonsensical answers."

Fixing this problem is problematic because:

(1) Making the model more cautious makes it reject questions that it can answer properly; and

(2) Supervised training leads to the model being misled because the ideal response depends on the model's knowledge rather than the demonstrator's knowledge. You can test it out on its official website after registering for it.

FINDINGS AND CONCLUSION

Although there are speculations that this technology will render librarians jobless, artificial intelligence will greatly enhance library operations and service delivery and increase the relevance of libraries in an ever-changing digital society. Furthermore, artificial intelligence, like many emerging technologies, is viewed as a threat to librarians and the human touch in libraries; however, the eventual acceptance and incorporation of artificial intelligence into library services will undoubtedly reveal the many potentials and promises it has for librarianship.

The research paper observes and concludes that the results of instruction were not positive. It's also noted that there was no room for improvement. ChatGPT can never replace actual human delivery. These face-to-face interactions (whether in person or online) and community relationships are also what many patrons have long enjoyed. Moreover, due to the very unusual valley effect, we doubt that there is enough incentive in the industry to create robots that could replace us as librarians in these functions in the future. Furthermore, artificial intelligence (AI) will not be able to compete with human intelligence, like libraries. The researchers discovered that the metrics used to evaluate the outputs of natural language processing AI produced machines that performed well on the metrics but didn't match what people would have anticipated. Numerous machine learning applications focus on simple measures that are merely approximations of the designer's intentions. This could result in issues like YouTube clickbait.

Even though many people were as astounded by the bot's abilities as they were by its limitations, some moved on quickly. Misinformation and prejudice are still common in ChatGPT, as they were in earlier iterations of GPT. For example, the model may provide incorrect solutions to algebraic problems. And since it seems so certain in its incredibly precise responses, users can readily rely on it.

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