

Impact of AI on Information Seeking Behavior: A Systematic Review

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Abstract— Libraries are not immune to the transformative effects of artificial intelligence (AI) across various sectors. This research paper aims to explore the influence of AI on the information-seeking behavior of library users. By conducting through an analysis of case studies, relevant literature reviews and empirical evidence, this study evaluate the ways in which AI technologies are reshaping conventional library services, enhancing information accessibility and user experiences. The objective of the study is to identify the primary factors that drive user behavior in order to provide a comprehensive understanding of information seeking pattern in the context of AI. Primary areas of emphasis encompass AI-based search algorithms, techniques in natural language processing (NLP), applications of machine learning, and their Incorporation into library systems. Additionally, the research investigates the significant effect of AI on university libraries, their users and librarians and its potential to enhance library services, and the future avenues for research and application.

Index Terms— Artificial Intelligence, Information Seeking Behavior, Libraries, Universities.

I. INTRODUCTION

Artificial intelligence may be one of the most important developments of this century. It will affect the lives of most individuals in civilized countries, and countries leading in the development of artificial intelligence by them will emerge as the dominant economic powers of the world.

“Artificial intelligence is the branch of computer science, concerned with the study and creation of computer systems that exhibit some form of intelligence systems that learn new concepts and tasks, systems that can understand a natural language or perceive and comprehend a visual scene, and systems that perform other types of feats that required human types of intelligence”.

Information seeking behavior refers to the deliberate and organized actions undertaken by an individual to collect access and evaluate information in order to meet specific needs. This process encompasses the identification of an information requirement, the active pursuit of relevant data, the critical evaluation of sources and the application of the obtained information to make well-informed decision or address challenges.

The advancement of technology has significantly enhanced the process of information seeking, particularly through the integration of artificial intelligence. Prior to the advent of AI, individuals relied on manual methods for information searches, utilizing printed materials or search engines that operated with a restricted set of keywords. The introduction of AI technology has brought about substantial transformation in the way information is accessed. It has made the search process not only simpler but also more efficient and quicker.

The incorporate of artificial intelligence into information

seeking behavior has initiated a significant transformation, altering the methods by which we access, analysed and utilize extensive data sets. The evolution of information retrieval is being influenced by innovations such as hybrid AI models, contextual comprehension, explainable AI, ongoing learning processes, and multimodal functionalities. These advancements not only improve system efficiency and capabilities but also emphasize user experience, transparency, and ethical implications.

A. Objectives of the research study:

1. To investigate how AI technologies are being employed to improve information-seeking behaviors within libraries.
2. To explore the incorporation of AI within library systems, such as library management system, digital repositories and discovery platforms and access the consequences for library operations and resource distribution.
3. To examine the influence of AI on the functions and duties of librarians and information specialist, focusing on alterations in job roles, necessary skills and the requirements for professional growth.
4. To evaluate the effect of AI on library users, particularly regarding their information seeking habits, overall user experiences and attitude towards services powered by AI.
5. Accessing the influence of AI on University libraries.

II. LITERATURE REVIEW

Pham, V.K., Pham Thi, T.D., & Duong, N.T. (2024) Did A Study on Information Search Behavior Using AI-Powered Engines: Evidence from Chat Bots on Online Shopping Platforms.

Hague, E.A., Brown, C., Latoza, T.D., & Johnson, B. (2024) Did A Study on Information Seeking Using AI Assistants.

A, Subaveerapandiyan, "Application of Artificial Intelligence (AI) In Libraries and Its Impact on Library Operations Review" (2023).

Nahla, F., & Masruri, A. (2024) Did A Study on Analysis of the Impact of Artificial Intelligence on Information-Seeking Behavior.

S. Chandrashekara & Mulimani, Mallikarjun. (2024) the Impact of Artificial Intelligence on Library and Information Science (LIS) Services.

III. RESEARCH METHOD

This study utilizes a library research methodology, commonly referred to as a literature review. This method entails gathering information and data from a range of supporting resources, such as books, articles, prior research outcomes, and journals relevant to the research topics being examined.

The data gathered from these sources will subsequently undergo a process of filtering and categorization, followed by analysis and processing to align with the arguments and discussion to develop this study.

IV. RESULT AND DISCUSSION

A. Artificial intelligence in Library:

The rising demand for information access has significantly contributed to societal development in recent years, with libraries serving as the primary source for this access. In light of the rapid advancements in computer technology and software applications, especially in the realm of artificial intelligence, libraries must adopt similar technologies to remain relevant. If libraries fail to embrace these innovations and modernize their methods of delivering information and services, they risk becoming outdated in today's fast-paced environment.

Artificial intelligence is utilized across various sectors like education, business, gaming, libraries, the military and healthcare. The idea of creating AI systems specifically for libraries was first introduced in 1990. These intelligent library systems provide knowledge-based services that can be advantageous for both library staff and users. (Asemi & Asemi, 2018).

The application of artificial intelligence in library systems encompasses a wide range of functions, including technical services, shelf reading, collection development, and information retrieval systems, among others. This application has evolved beyond mere knowledge-based services and natural language processing (NLP). The realization of a smart library is not only possible but also on the horizon, thanks to advancements in artificial intelligence programming.

B. The advantage of AI in Libraries:

AI advantage for libraries is significant, as it transforms conventional library functions and improves user interactions. University libraries are undergoing significant transformations due to the influence of AI, which is reshaping their operations and the services they offer. The impact of AI on university libraries can be observed in several key areas. The key benefits include:

1. **Increased Efficiency:** By automating routine tasks such as cataloging, classification and information retrieval, AI allows library staff to focus on more complex and meaningful activities to quicker service delivery and enhanced productivity.
2. **Improved user experience:** AI-driven recommendation systems analyze users' search histories, preferences and behavior patterns to help them discover relevant materials.
3. **Enhance Accessibility:** AI technologies enable libraries to offer services that cater to diverse user groups, including individuals with disabilities. For instance, AI-driven text-to-speech and speech recognition tools facilitate access to digital resources for those with visual impairments.
4. **Resource management:** AI algorithms assess usage trends and demand patterns to enhance collection development and management, by identifying popular items, phasing out outdated resources, and forecasting future requirements, libraries can optimize their resource allocation.
5. **Informed decision making:** AI tools empower library administrators to make decisions based on data analysis, gathering valuable insights from large datasets. Predictive models and analytics dashboards help identify emerging trends, evaluate service effectiveness and allocate resources efficiently.
6. **Content Curation:** AI-enabled content curation tools sift through extensive digital collections to pinpoint high-quality resources that align with the library's offerings. This accelerates the acquisition process and ensures that users have access to current and reliable materials.
7. **Preservation and digitization:** Technologies powered by AI enhance the preservation and digitization of delicate or deteriorating materials, such as historical documents and rare manuscripts. Automated scanning and image enhancement techniques guarantee the safeguarding and enduring accessibility of cultural heritage assets.
8. **Innovation services:** AI facilitates the implementation of advanced library services, including interactive kiosks, chatbots and virtual assistants. These innovations enhance overall user satisfaction by offering patrons immediate assistance, guidance and information retrieval.
9. **Cost savings:** AI enables libraries to reduce operational

costs and optimize resource utilization by automating repetitive tasks and streamlining processes. The capacity of AI technologies to boost productivity and efficiency can lead to significant long-term cost savings.

C. Impact of AI on information seeking behavior:

The advent of AI has profoundly influenced information seeking behavior. AI technologies increasingly streamline the process of information retrieval (Nur Maulidila Alsyah, 2023). Beyond merely facilitating access, AI significantly reduces the time required for searches and delivers information that is both concise and easily comprehensible.

The implementation of AI tools such as Perplexity AI, Google Bard, Bing AI/Bing Chat, You.com, and Chat Sonic enhances accessibility to information, minimizes search duration, and ensures that the information provided is straightforward and user-friendly.

The user friendliness of AI applications represents a significant advantage in the realm of information retrieval. Furthermore, AI's capability to comprehend the context of inquiries enhances its appeal to information seekers, surpassing traditional methods such as mass media and print sources.

The AI search functionality is adept not only at interpreting straightforward questions but also at grasping more intricate and nuanced human language. Such inquiries undergo analysis, leading to the provision of more comprehensive responses. This facilitates a better understanding of the information acquired by users and enriches their knowledge on the subject matter being explored. Nevertheless, the integration of AI in information retrieval is not without its drawbacks.

D. Adverse effects associated with the use of AI:

The uses of AI in this context are:

1. Overreliance on AI technology can foster dependency, negatively influencing the decision-making processes of information users.
2. Data misrepresentation is another concern: generative AI is often criticized for generating inaccurate, plagiarized or entirely fabricated information.

Although some AI tools like perplexity AI, assert that they provide accurate information, numerous others generate false or unrealistic content that can easily mislead users. This capability frequently condenses web search results according to different website categories. Therefore, it is essential to implement regulations and oversight in the use of AI to reduce these adverse effects.

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