

‘Artificial intelligence-enabled virtual assistants: a systematic review on redefining user engagement in libraries.’



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AI in Libraries



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Presentation overview

- Introduction- general overview of AI
- AI aspects in libraries with focus on
 - ✓ Virtual Assistants
- Studies on Virtual assistants
- Challenges in Implementing AI in Libraries
- Role of Librarians
- Conclusion and Discussions



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INTRODUCTION.

- The history of libraries is one of constant adaptation and change.
- Def of AI: Machine's ability to perform a task that would have previously required human intelligence. (Barsha & Munshi, 2023).
- A method of making a computer, a computer-controlled robot, or a software think intelligently like the human mind (Duggal, 2024).



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INTRODUCTION CONTD.

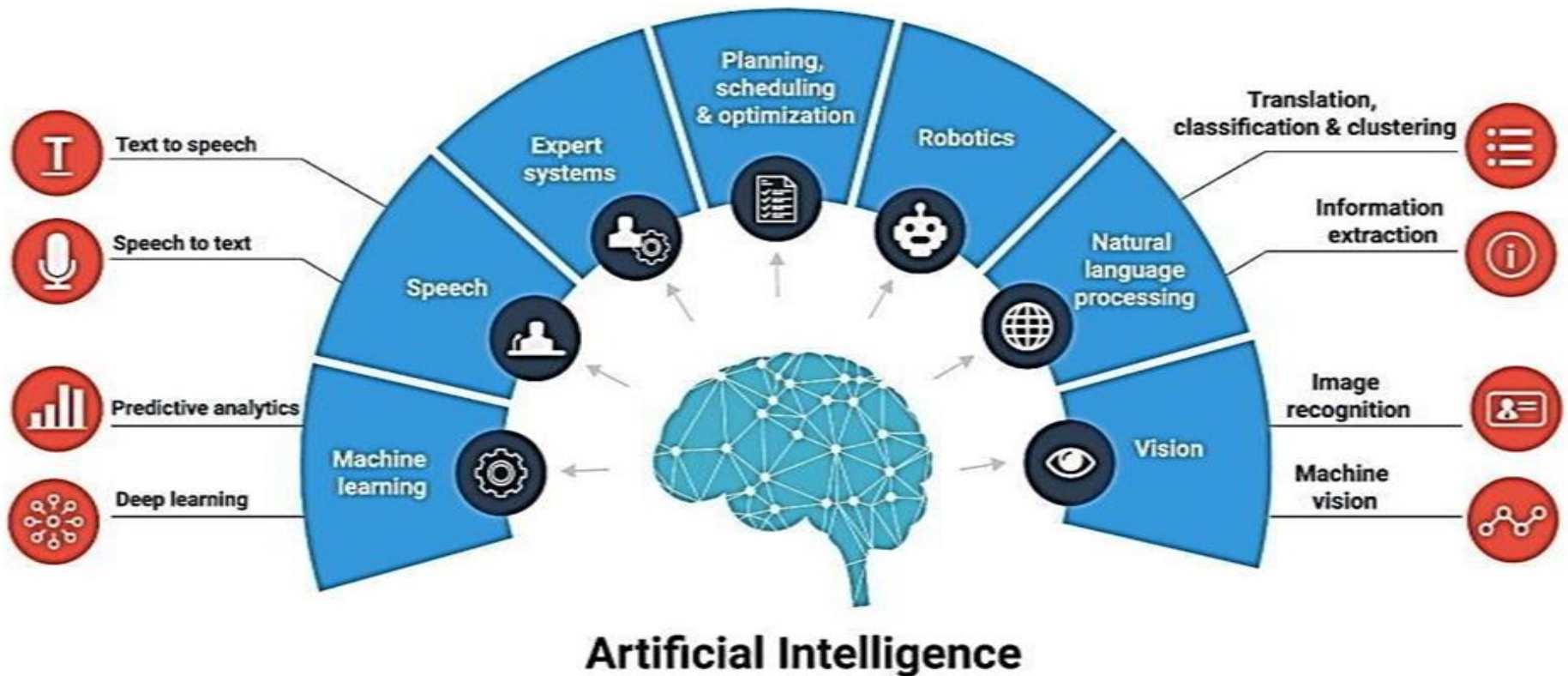
- Artificial intelligence: one of the rising technologies-tracking your FB feeds, watching your credit card purchases, tracking your Google searches, suggesting which news stories to read, purchase suggestions, etc.
- Human intelligence to the next degree, perhaps eventually a seemingly infinite degree, Google CEO Sundar Pichai declaring it “more profound” than fire, electricity, or the internet.” (Green, B. P. (2022).



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AI AT A GLANCE



Methodology

- By examining the existing literature and research findings, the paper sort to provide insights into the practical implications of AI for libraries and to offer recommendations for successfully integrating AI into library operations
- The study employed desktop analysis. The approach to gathering and analyzing existing literature involved a systematic search of academic databases and journals to identify relevant studies on AI applications in libraries.



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Virtual Assistants

- Computer programs that can simulate an intelligent conversation, through text, speech or potentially through an embodied representation. Can answer directional questions, reference questions, replacing the “Ask-a librarian-chat”
- Latest evolution offering personalized assistance, enhancing user engagement, and facilitating access to the growing universe of digital content.



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Panjab University

- Study conducted by Panda and Chakravarty, at Panjab University in Chandigarh, India potential of AI chatbots to offer round-the-clock assistance, automate responses to frequent user inquiries, and facilitate a seamless user experience, even in the absence of human staff(Panda & Chakravarty, 2021).



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Punjab contd.

- Application of Kore.ai, a prominent chatbot platform, exemplifies how libraries can leverage conversational AI to meet the evolving needs of their patrons, offering insights into the chatbot's ability to handle a wide array of tasks, from answering basic queries to providing personalized recommendations



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New York Public Library

- The implementation of "Ask NYPL," an AI-powered chatbot, by the New York Public Library aimed to enhance user experience by providing immediate responses to common inquiries, thus allowing library staff to focus on more complex tasks (New York Public Library, 2021).
- Libraries employing AI-enabled virtual assistants report increased user interactions, with patrons appreciating the immediacy and reliability of the support provided by these digital tools.



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Systematic lit contd.

- Subaveerapandiyan (2023) delved into the transformative impact of Artificial Intelligence (AI) on library operations, drawing on insights from 65 articles. The review illuminated the significant advancements AI has brought to libraries, notably through the introduction of chatbots, intelligent systems, and robotics.
- Highlights- providing instantaneous support, thereby elevating user satisfaction



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Helsinki Library.

- Helsinki City Library's flagship, “Oodi”- integration of AI powered virtual assistants aimed to transcend language barriers and promote digital literacy.
- The AI system interacts in multiple languages, providing personalized assistance and navigational support. This initiative significantly enhanced user experiences, particularly benefiting Helsinki's multicultural community.



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Systematic lit contd.

- Gürsen, et al. (2023) explores the incorporation of Artificial Intelligence (AI) technologies across university library operations. The study highlights the dual role of AI in enhancing user services and streamlining backend library processes, such as cataloguing and collection development



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Case of Singapore

- The National Library of Singapore embarked on an ambitious project to integrate AI into its services, aiming to revolutionize how users interact with its vast collection of resources. This initiative sought to leverage Singapore's high digital literacy rates and robust digital infrastructure to set a new standard for library services in the digital age.



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Nigerian academic libraries

- Ogwo et al. (2023)-shed light on the various AI technologies being adopted, such as chatbots for user assistance, machine learning algorithms for data analysis, and natural language processing for information retrieval. By investigating the perceived impact of these technologies on library services, the study offers valuable insights into the challenges and opportunities that arise from their implementation.



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University of Pretoria (UP) in South Africa

- Integration of AI-enabled virtual assistants, known as "Libchat," across its library operations to handle basic queries-opening hours, resource location
- It utilized natural language processing to understand and respond to queries in real-time, providing around-the-clock assistance to users particularly for off-campus students accessing digital resources remotely-University of Pretoria, 2022).



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Challenges contd.

- Most AI issues stem from incorrect and biased data
(‘garbage in,’ garbage out’).
- Absence of data privacy regulations in some countries
- High cost of implementing AI-based solutions
- Shortage of skilled librarians and fear of job loss
- Moral and ethical dilemma



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What can Librarians do?

- Librarians can provide expertise in data storage, quality, safety and ethical personal/sensitive data
- -Engage AI system developers, and create lib applications that meet ethical and privacy standards
- Copyright laws-advocate for text and data mining inclusion and educate users



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Conclusion

- Human expertise needs to complement AI technologies, ensuring that libraries remain vibrant centres of learning and community engagement.
- Scholars and practitioners can delve into exploring the long-term impacts of AI on library services, user behavior, and community engagement behaviour



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Discussions



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