Prospects and Challenges of integrating Artificial Intelligence in to library services: A study of review of literature

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Abstract: *This paper reviews literature on the prospect and challenges of integrating Artificial Intelligence in to library services. The main purpose of the study is to learn how libraries are currently utilizing Artificial Intelligence in to library services. The researchers used the descriptive and content review methods to critically examine the article from scopes database titled prospect and challenges of integrating Artificial Intelligence into library services from 2020-2024. An analysis of earlier research indicates that integrating AI technology into the current information system has a great deal of potential to improve it. In order to successful integrate AI libraries must work with professional researchers and policy makers and adopt a continuing education approach to AI. Our conclusion is that positive perspectives on the possible advantages of AI for library services are required.We compared the published paper in the field of artificial intelligence from the scopes database. Which is a novel approach to the literature review in this area.*

Keywords*: Artificial Intelligent (AI); Intelligent Systems; Library services ; Library system; Intelligent library*

Introduction

The modern world is undergoing rapid technological change. Artificial Intelligence (AI) and cutting - edge technologies offer fresh perspectives and instruments that have the potential to fundamentally alter the public and industrial spaces. The term Artificial Intelligence (AI) describes a computer's or a robots capacity to carry out operations that are typically performed by intelligent entities. Artificial Intelligence (AI) comprises system that demonstrate cognitive functions similar to those of humans, such as inference interpretation , extra pollution and experience-based learning.

When it is integrated in to library services Artificial Intelligence has the potential to greatly improve information access and user experience. Large libraries including academic libraries are also considering AI to support their operations.AI is mostly utilized by large corporations. However backstage technical services such as Information Organization processes (classification, cataloguing and subject determination) collection, selection, shelving and loan activities such as circulation that librarians perform on a daily basis. So AI has the power to completely transform library services by improving user interfaces Making tailored recommendation and guaranteeing fair access information.

Literature Review

Mallikarjuna, C (2024) The literature review on Integrating in artificial intelligence(AI) in

academic libraries is presented in this article, with particular attention to the revolutionary effects of AI-based tools and services on research experience, resource utilization and library management. The review highlights a number of issues and problems that require attention, including staff development and training, privacy and ethical issues and user centred approach.

Lund.B.;Khan,Daud and Yuvaraj, Mayank(2024) The goal of the review is to synthesize current knowledge in order to identify gaps and encourage future research similar to ChatGPT in medical libraries. Using cooper's integrative review methodology is study includes a thorough examination of the body of research on chatGPT and possible applications in library settings. After 166 paper were found through a systematic literature search across multiple databases,30 of the results were deemed irrelevant and 136 of the papers were chosen based on methodological evaluations and abstract reviews.

Barsha and Munshe(2024) This study aims to examine the opportunities and difficulties that exist today for integrating AI into library services in developing nations. The stud's main goal is to identify the crucial issues and challenges these countries face when implementing AI-based solutions and suggest workable solutions. According to the review, there are a lot of opportunities for integrating AI into library services in developing countries. These opportunities could lead to better user experiences, increased productivity and efficiency and better access to Information.

Alam; Subaveerapandiyan; Mvaula and Tiwary(2024) This research explores the artificial intelligence(AI) literacy within Zambian academic libraries with a focus on librarians perceptions and applications of AI.Data from 82 diverse participants were gathered using purposive and convenience sampling methods. The findings indicate a solid understanding of AI fundamentals among Zambian librarians and positive attitudes towards AI's potential benefits in library services.

Subaveerapandiyan and Gozali(2024) The study aims ton understand the knowledge, awareness and views on artificial intelligence (AI) and Its challenges and opportunities. The research employs quantitative approach, collecting data from 386 library professionals in academic institutions across India using a close-ended survey. The finding shows that Indian library professionals are generally aware of AI and Its potential benefits in libraries.

Jha(2023) This paper aims to investigate the ways in which libraries and information centres are transforming their services through the use of robots as well as the potential applications of robots in the future. This paper provides an overview of various AI-Mediated robot activites.

Inamdar(2023) The paper attempt to examining how AITGs affect the library environment including the services provided, the resources made available and the roles played by library employees is the goal of research on AITgs effect on libraries. In order to understand the issue, the researcher critically analyzed and reviewed the relevant published work, including books, journals and articles. The current study looked at how AITGs affect libraries. According to the study findings, AITGs can help libraries improve services, streamline operations and increase accessibility to their collections.

Jha(2023) The purpose of this paper is to highlight the use of artificial intelligence(AI) in library operations. The study will assist policy stakeholders, Librarians and academic in the field in addressing the issues prior to the development of AI in library services. An extensive review of literature on Artificial Intelligence and smart libraries was conducted in order to identify the emerging technologies in smart library domain. Based on this study .It can be concluded that artificial intelligence (AI) is a promising technology for library services.

Khan;Gupta;Sinhababu and Chakravarty(2023) focuses on analysing the potential impact of artificial intelligence(AI) on academic library services, The study hopes to provide insights in to how libraries can adapts to these changes to better serve their patrons. The three AI systems chosen for this study represent different AI

Approaches that can be used in academic libraries. The study aims to examine how artificial intelligence AI could potentially affect specific services provided by academic libraries in near future.

Hussain and Ahamad(2023) The study employs a bibliometric approach to conduct a thorough analysis of current research on artificial intelligence in academic libraries (AI in Als) The study used bibliometric indicators to identify important trends, patterns and research gap in literature.

Gupta and Gupta (2023) The study aims to highlighting the benefits and interactions between the frameworks this column aims to explore the frameworks that libraries can use to leverage AI technologies and foster digital innovation by continuously experimenting to innovate their services of their patrons. This will provide insight for librarians who are interested in advancing technology in libraries and putting AI solutions   into practices.

Jha(2023) The study focuses on the block chain and their challenges to educational library services. The main objective of applying block chain technology (BT) libraries and information centres is to provide unrestricted access to digital content and print collections for all potential users.

Panda and chakravarty (2022) This paper aims to demonstrate an artificial intelligence (AI) driven solution that can be practically implemented i form of a "InfoBot" or "Chartbot" to fulfil user needs 24/7 with minimal or no human intervention. The study is findings show that AI ChatBots provide libraries with a dependable way to start virtual assistance.

Kaushal and yadav(2022) this paper reports on qualitative study intended to investigate the perceived risks and difficulties associated with the implementation of ChatBots in libraries as well as how ChatBots could contribute to provide a better virtual assistance experience for library users and stakeholders.

Bansal;Arora;Kunar and suri(2020) This Paper discusses AI basic requirements, application in libraries, concluding that AI is a necessary tool for libraries today. The goal of this paper is to expedite the applications of AI in libraries, not only to provide services to the current users but also to find creative ways to attract new user.
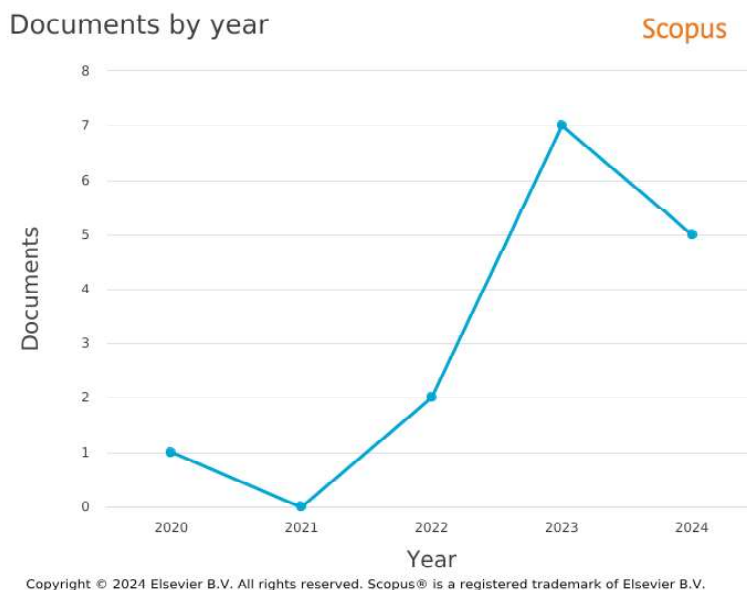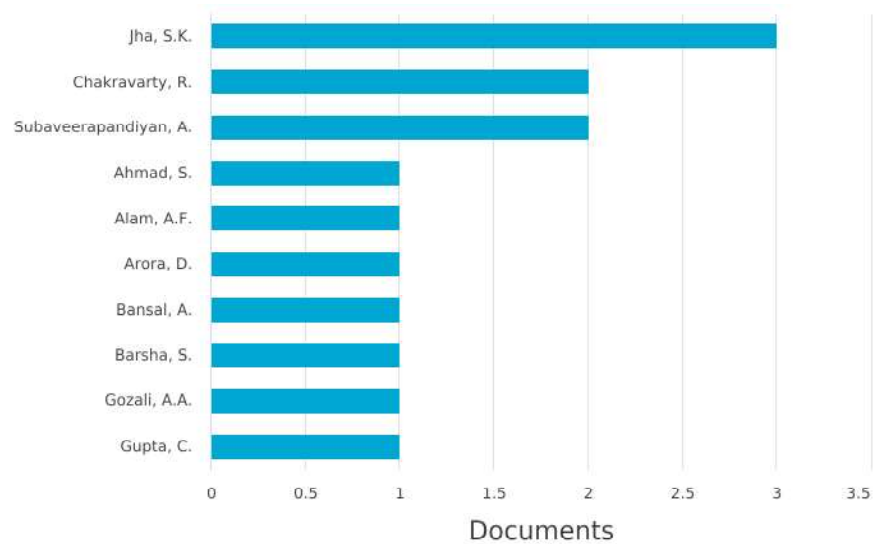
Figure 1

Figure 2

Documents by author

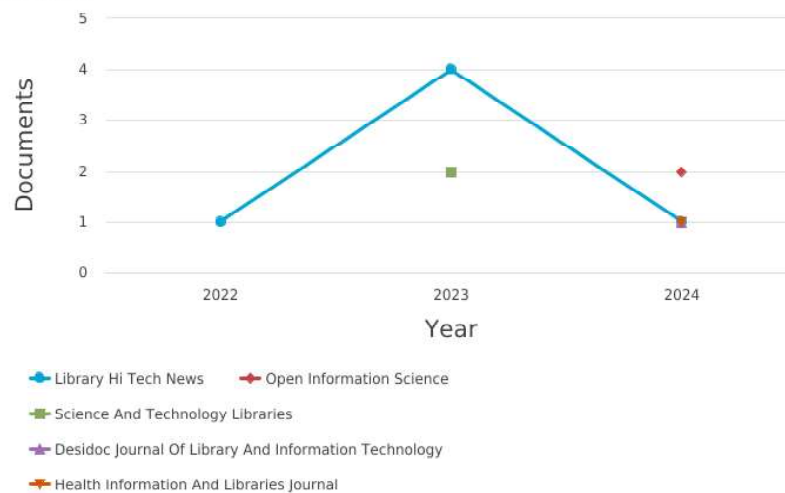Compare the document counts for up to 15 authors.

Scopus

Figure 3

Documents per year by source

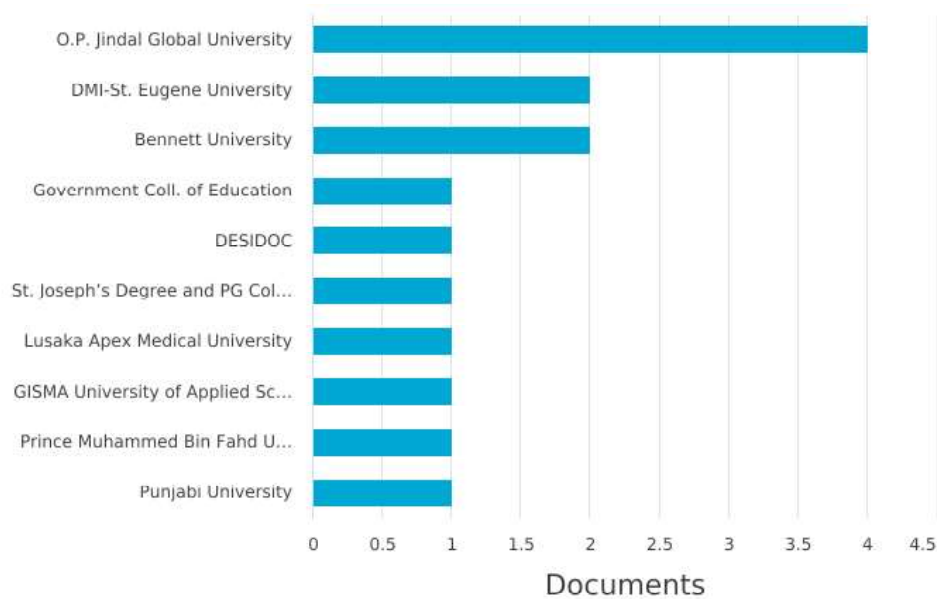Compare the document counts for up to 10 sources.Compare sources and view CiteScore, SJR, and SNIP data

Scopus

- Library Hi Tech News
- Open Information Science
- Science And Technology Libraries
- Desidoc Journal Of Library And Information Technology
- Health Information And Libraries Journal

Figure 4

Documents by affiliation

Compare the document counts for up to 15 affiliations.

Scopus

Figure 5

Documents by type

Scopus
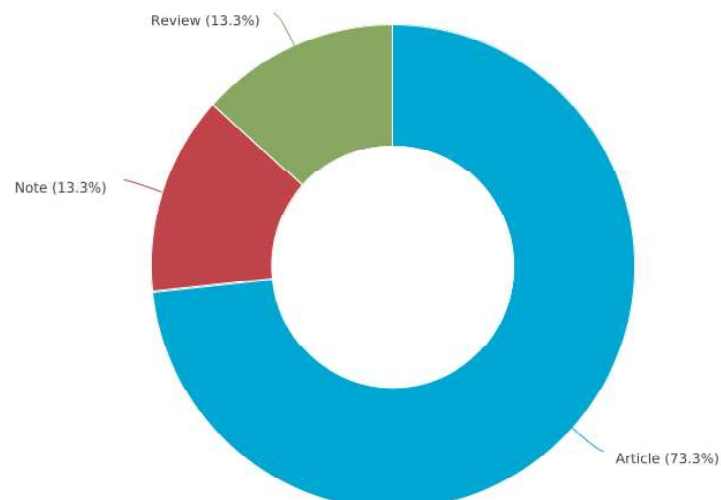
Review (13.3%)

Note (13.3%)

Article (73.3%)

Aims and Objectives

- To identify the use of AI in library operations

- To find out the current prospects and challenges of integrating Artificial intelligence in to library service.

- To understand the publication output pattern and growth over time from 2020 to 2024 in order to assess the future prospects of this field of study.

- To determine the authors, institution and countries in this field of research.

Purpose of reviewing related literature

- To identify the gap in the literature.

- To find out others who are working in same fields

- To ascertain the crucial work being done in the field.

- To find concepts and information that might be relevant to the study.

- To ascertain which methods could be useful for the study.

Methodology

The researchers used descriptive and content review methods to critically examine the article from scopes database titled prospect and challenges of integrating artificial intelligence in to library services from 2020-2024.

Research Gap

Based on the studies mentioned in recent literature here are some potential research gaps.

AI chatborts for conversation in libraries: The recent literature examined research on library chatborts. There is need to investigate the development of Chatbot technology in libraries, the reason s behind their use, and the experience of library patrons.

Utilizing AI in Digital Repositories:There are few research trends on AI in library repositories.

Prospect and challenges of AI in library services there is a gap in problem sloving techniques where talked about.

AI in libraries that is Equitable and Ethical: There is need to investigate equitable and ethical AI in libraries.

Findings

- An analysis of earlier research indicates that integrating AI technology in to current information system has a great deal of potential to improve it.

- In order to successful integrate AI libraries must work with professional researchers and policy makers and adopt continuing education approach to AI.

- In this research the study captures the variety of AI-mediated robot activities through real world examples of libraries utilizing various types of robots.

- Our conclusion is that positive perspectives on the possible badvantages of AI for library services are required.

Scope of Future Research

Scope for future studies should be investigate how to offering librarians awareness raising and training initiatives and ensuring moral AI application. There are few research trends on AI in library repositories. Research can be done in problem solving techniques.

Conclusion

The main aim is to examining existing literature available on the prospects and challenges of integrating Artificial intelligence in to library services. By implementing AI, Libraries will be able to more easily assist users in their hour of need.AI in libraries allows patrons to explore the world of knowledge like never before. In general, AI can improve the library experience for both patrons and library professionals through creativity and astute decision making.

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