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M-TECH. AND AI-GPTs IN ACADEMIC LIBRARIES: A COMPREHENSIVE STUDY

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Abstract— Libraries play an important role in disseminating information, supporting research and fostering a learning environment M-Tech. and AI- GPTs, a state-of-the-art language model, offer promising solutions to create dynamic and interactive library environments. This paper explores the integration of M-Tech. and ChatGPT in libraries to enhance user engagement and information access, discusses the current landscape of M-Tech. and ChatGPT applications in libraries, analyzes their benefits, impact on user experiences, and aiming to provide insight about potential challenges and future directions of library services.

Keywords*— Mobile technology, Artificial Intelligence, AI-based GPTs, ChatGPT, BharatGPT, chatsonic, SWOT analysis, GitaGPT, ChatGPT for Library Services, , KissanGPT.*

I. INTRODUCTION

The GPT is transformer which is based on the transformation process. The advent of M- Tech. (Mobile Technology) and AI-GPTs mark a significant milestone in natural language processing and understanding. Libraries, traditionally known as repositories of knowledge, are embracing this technology to offer innovative services and engage with patrons in new ways. This paper aims to review the impact of M-Tech & AI-GPTs in libraries, examining its potential applications, limitations. M-Tech., including smart phones and tablets, has become ubiquitous, offering libraries new opportunities to connect with users. Additionally, the emergence of advanced natural language processing models like ChatGPT opens up possibilities for interactive and intelligent interfaces. This paper examines how these technologies can be effectively integrated into library services to enhance user engagement and information retrieval.

II. OBJECTIVES

(a) To discuss the AI-GPTs Models and study the Application, advantage of chatGPT in the context of Library services.

(b) To study the effectiveness of M-Tech. and AI-GPTs in increasing patron interaction with library services.

(c) To analyze Strengths, Weaknesses, Opportunities and Threats (SWOT) of these innovative technologies.

(d) To interpret the impact of AI-GPTs on the information collection process of the Higher Education System.

III. LITERATURE REVIEW

Saxena, K. & Sharma, S. (2024) observed that Congruent and contextually relevant text can be produced via ChatGPT, making them useful for content creation such as writing articles, blog posts social media captions, Product Descriptions and personalized e-mails for Library purpose. ChatGPT has the potential to transform the University/College libraries by providing personalized feedback and support to students.

Aithal and Aithal (2023) the ability of GPTs based on artificial intelligence to deliver expert information in library services was highlighted in the article. ChatGPT provides prompt and accurate answers to questions from students. Library systems enable access to a wide range of resources, including books, journals, online databases, and other specialized collections. Given its capacity to collect and analyze massive volumes of data from a variety of sources, ChatGPT can be a very useful tool for information gathering. Those who might not have access to traditional libraries or services can more easily use ChatGPT because it can be accessible online from any location with an internet connection.

Acheampong and Agyemang (2021) conducted a survey among the students and library staff working at the two public university libraries- University of Ghana (UG) and University of Cap Coast (UCC) to assess the role of mobile

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technologies to enhance academic library services and observed that the respondents of the survey revealed that they were in possession of mobile devices, and expressed great expectations about the availability of library and information services on m-tech platform while they were on the go.

Hamad et al. (2018) observed that the library staff competencies to learn new technological skills to provide m-tech services are favorable. Their study showed that 72% of the librarians are capable of learning contemporary technologies to offer m-tech services. But their research also showed that about 37% of the staff agreed that most of the libraries selected for the study do not provide regular trainings to their staff to help upgrade their skills with new technological trends in libraries including m-tech based services.

Sharma and Sahoo (2014) revealed that librarians should be competent in the following set of skills if they want to provide services on m-tech platforms: create tailor mobile-optimized content; have internet application skills such as ability to send or receive emails via mobile devices and be competent in interacting with users on web 2.0 platforms with m-tech applications and on mobile-friendly webpages.

1. VERSIONS OF AI-GPT MODELS:

There are several versions of the AI (Artificial Intellegence)-Generative Pre-trained Transformer (GPT) developed by OpenAI. Here are some of them-

GPT-1: The first version of the model, introduced by OpenAI, marked the beginning of the GPT series. It had 117 million parameters.

GPT-2: Released in 2019, GPT-2 is a larger model compared to GPT-1, with 1.5 billion parameters. It generates content that is logical and appropriate for the context over longer passages.

GPT-3: The latest version as of my last update, GPT-3, is significantly more powerful with 175 billion parameters. It has been used for a diverse range of natural language generation tasks, creative writing, and even programming assistance.

GPT-3.5: The architecture that powers me, GPT-3.5, is based on the GPT-3 model. It's designed to generate human-like text and assist with a variety of AI language understanding and generation tasks.

2. POPULAR GPT MODELS-

(i) ChatGPT

ChatGPT is a chatbot created by OpenAI and released on November 30, 2022. Built on a Artificial Inteligence language model, it enables users to refine and steer a conversation towards a required length, format, style, language and level. The prompts and replies, known as prompt engineering, are indeed considered within the context of the conversation.

ChatGPT is constructed on either GPT-3.5 or GPT-4, both of which are members of OpenAI's proprietary series of generative pre-trained transformer (GPT) models, based on the transformer architecture developed by Google. While the GPT-4-based version "ChatGPT Plus" is provided priority access to newer features to paid subscribers.

(ii) BHARATGPT

CoRover, a Bengaluru-based conversational AI platform, launched BharatGPT, a AI language model that supports over 12 Indian languages and more than 120 foreign languages. This is in contrast to OpenAI's ChatGPT, which only supports 95 languages and primarily understands instructions in English.

(iii) CHATSONIC

Chatsonic is a reliable AI chatbot supported by Google, unlike ChatGPT. It is ideal for creators in need of up-to-date information on current events. It includes footnotes for source verification and is powered by GPT-4, OpenAI's latest model.

(iv) GITAGPT

GitaGPT is an AI chatbot created by Sukuru Sai Vineet, a Google India software developer. It uses GPT-3 technology to provide solutions to life's questions by referencing the Bhagavad Gita

(v) GUPSHUP

Gupshup has introduced Auto Bot Builder, an advanced chatbot creation tool that utilises GPT-3, a powerful language model, to build chatbots specifically tailored to enterprise needs.

(vi) LEXI

Lexi isan AI Assistant driven by ChatGPT and launched by Velocity, a fintech company. Lexi aims to assist e-commerce founders by providing simplified business insights.

(vii) KISSANGPT

KissanGPT is an innovative product that has gained attention. It's an AI voice assistant for agriculture-related inquiries developed by Pratik Desai, the founder of Titodi. KissanGPT utilises the power of GPT3.5 and Whisper models,

(viii) HAPTIK

Haptik, the conversational AI platform owned by Reliance Jio platforms, has announced its integration of OpenAI's generative AI tool, ChatGPT, into its products. This move follows other Indian platforms like Leena.ai and Yellow.ai in utilising GPT3.5 to enhance their offerings.

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(ix) YELLOW.AI

ChatGPT has prompted conversational AI companies to reevaluate their product strategies. Yellow.ai, for example, has been using language models (LLMs) for content generation, but with ChatGPT, they have expanded their use-cases and explored other LLMs beyond GPT-4, including Anthropic and Meta's LLaMA.

(x) VERLOOP.IO

Verloop.io is a customer support platform that utilises artificial intelligence to provide scalable, round-the-clock support in multiple languages to global customers in the e-commerce, real estate, and banking sectors.

It's important to remember that after last update, GPT may have undergone updates or modifications. OpenAI could continue to refine and release new models beyond GPT-3. If there are any developments or new releases, I recommend checking OpenAI's official communications for the latest information.

3. MOBILE APPLICATIONS FOR LIBRARY SERVICES & ITS TYPES -

- **In House Application** - Libraries that produce in-house apps require knowledge from their own IT team or from a specific mobile app development lab.
- **Customized Mobile Application** - Limitations also apply to customized app developers. Adding functionality is limited to modules that already exist.
- **Plug-in Application** - Libraries that employ plug-in apps, such as KOHA MOPAC, Knimbus, EBSCO, etc., only get limited service; they don't get the customization and flexibility that comes with developing their own app.

4. Popular Mobile Apps for Library Services in India

(i) **KOHA OPAC:** It is a specially made mobile application created for libraries that use KOHA Integrated Library Software to automate their circulation processes. The user's OPAC login credentials can be used to access the mobile app, which functions as a plug-in and retrieves content from Koha. The majority of the mobile applications are designed for fifteen minutes or less of engagement. For example, the KOHA OPAC app allows users to quickly access important information about their reading history, fines, and library items, as well as receive push notifications for each transaction.

(ii) **Niti Ayog e Library**: NITI Ayog Putting a vast amount of open access knowledge at your fingertips and accessing library resources by using the eLibrary mobile application (NITI Aayog, 2019)

(iii) **E Resources at IIT Delhi** : Utilize a single platform to search through all of the IIT Delhi's subscribed e-Resources, such as eBooks, journals, databases, library catalogs, institutional repositories, etc. available for iOS and Android.

(iv) **The National Digital Library of India**: It gives access to wide range of digital contents. Provides different ways to browse content repository, filtering result, content relevant for different levels of users, subject domain and languages both for android and iOS. (NDL, 2016)

(v) **Vikram Sarabhai Library App**: contains connections to different services and resources offered by the library. The recently introduced "Knowledge@IIMA" feature offers connections to the faculty directory, IIMA research articles (obtained via Scopus), doctorate theses, and other resources. (VSL, 2019)

(vi) **IISER Bhopal Library Application**: This app gives users access to the central library, IISER Bhopal, which is the exclusive provider of e-library services. (IISER, 2020)

(vii) **IIM Libraries Consortium Application:** This app includes sections for annual meetings, publications, consortium members, eResource list, doctoral theses, annual meetings, union catalog, and more. (IIM Ahmedabad, 2019)

(viii) **Capira Mobile Library Application**: The product Capira, which OCLC acquired, consists of ready-made and customized mobile apps for libraries as well as custom mobile library apps (CapiraMobileTM) and off-the-shelf mobile library apps (CapiraReadyTM). Capira has a simple-to-use mobile product range.

(ix) **Zoho Creator App** : It makes it possible for non-programmers to create fully working apps using interactive drag-and-drop and click-and-configure interfaces.

5. USE OF CHATGPT IN UNIVERSITY LIBRARIES:

Integrating ChatGPT into university libraries can bring about significant advancements in user interactions, information retrieval, and overall library services. Below are some potential applications and benefits of incorporating ChatGPT in university library settings:

(i) **Virtual Reference Assistance**: Implement of ChatGPT as a virtual reference assistant to provide real-time assistance to users. Enable users to ask questions, seek guidance on research strategies, and receive instant help.Enhance the availability of reference services beyond traditional operating hours.

(ii) **Catalog Search Enhancement**: Integrate ChatGPT

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to improve catalog search interfaces, allowing users to make natural language queries. Provide personalized recommendations based on user preferences and past searches.Streamline the information retrieval process, making it more intuitive for students and faculty.

(iii) **Subject-Specific Guidance**: Develop specialized ChatGPT modules for different academic disciplines.Offer subject-specific guidance and resources to assist students and faculty in their research endeavors.Customize ChatGPT to understand and respond to discipline-specific terminology and requirements.

(iv) **Collaborative Research Support**:Enable ChatGPT to assist users in collaborative research projects by providing information on collaborative tools, citation management, and interdisciplinary resources.Facilitate communication and coordination among users working on joint research initiatives.

(v) **Library Orientation and Tours**:Utilize of ChatGPT to provide virtual library orientation and tours for new students and faculty. Offer interactive guides to library facilities, services, and resources through a conversational interface.

(vi) **Event and Workshop Information**:Implement ChatGPT to disseminate information about library events, workshops, and seminars.Provide details on upcoming events, registration processes, and any relevant materials.

(vii) **Language Support Services**:Customize ChatGPT to offer language support services, assisting international students and faculty members with language-specific queries.Provide translation services for library materials or guidance in multiple languages.

(viii) **Assistance for Diverse Learning Styles**:Cater to diverse learning styles by incorporating ChatGPT into educational resources and tutorials.Offer interactive and dynamic learning experiences tailored to individual preferences.

(ix) **Data Analysis and Trends**:Leverage ChatGPT to analyze user queries and interactions to identify trends and areas for service improvement.Utilize data-driven insights to enhance the overall user experience and optimize library services.

(x) **Continuous Improvement and Updates**: Establish mechanisms for gathering user feedback on the ChatGPT interface and services. Regularly update and improve the ChatGPT system based on user input, technological advancements, and evolving user needs.

By integrating ChatGPT into university libraries, institutions can create a more dynamic, responsive, and user-friendly environment, enhancing the overall academic experience for students and faculty. This approach aligns with the evolving landscape of technology and information services in higher education.

6. SWOT Analysis of M-Tech. and ChatGPT.

The following is how to perform a SWOT analysis, a strategic planning tool, to assess and analyze the opportunities, threats, strengths, and weaknesses of M-Tech and ChatGPTs:

Strengths:

(i) Users can instantly access a wide range of data and information & resources from around the globe.

(ii) Personalized suggestions based on the user's requirements and interests can be given by both technologies.

(iii) Large volumes of data may be processed and analyzed fast by these technologies, which facilitates users' search for the information they require.

(iv) By offering a platform for knowledge and resource sharing, both technologies can help library users collaborate with one another.

(v) Lower maintenance and infrastructure costs.

(vi) Increased efficiency to manage & search through information.

Weaknesses

(i) M-tech and ChatGPT are dependent on internet access and cannot function in places with inadequate connectivity.

(ii) It's possible that M-tech and ChatGPT won't be able to offer tangible materials like manuscripts, rare collections, and books.

(iii) Reliance on technology and the possibility of errors or malfunctions in it.

(iv) The possibility of biases or errors in AI suggestions and algorithms.

(v) Insufficient in-person presence and opportunity for in-person interactions with other users and librarians.

Opportunities:

(i) Higher education institutions can save the expense of preserving physical collections by utilizing ChatGPT and M-tech.

(ii) Higher education institutions can improve information accessibility for users who are not physically present on campus by utilizing M-tech and ChatGPT.

(iii) These technologies can help create a digital library of educational materials that users may access from anywhere in the world.

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(iv) Improving user experience through integration with current library systems.

(v) The creation of fresh AI-based software and technology to enhance information accessibility even further.

(vi) Greater user cooperation and multidisciplinary research.

Threats:

(i) Traditional library systems, which could eventually become outdated, could be threatened by M-tech and ChatGPT.

(ii) M-tech and ChatGPT might not offer as high-quality of information as more conventional library systems.

(iii) Information about Library users' privacy and security may be threatened by M-tech and ChatGPT.

(iv) Potential for regular job losses among librarians and other library staff.

(v) Competition from all other AI-based information systems and technologies.

(vi) Resistance from all users who prefer traditional library systems or who are hesitant to embrace new technologies.

In light of these factors, the SWOT analysis examines how M-tech and ChatGPT-based information systems offer numerous advantages and strengths but also certain disadvantages and dangers. In order to ensure that they are attempting to mitigate potential weaknesses and risks, higher education institutions should carefully consider these considerations while integrating M-tech and ChatGPT-based information systems into their current library systems.

IV. Conclusion

The combination of mobile technology with AI-GPTs offers a viable path for improving user experiences and broadening the scope of library services as libraries develop in the digital age. Libraries may remain essential hubs of knowledge and community participation by taking proactive steps to incorporate new technology and handling obstacles thoughtfully. Libraries have amazing opportunity to transform user interactions and services with ChatGPT. However, overcoming the implementation-related obstacles calls for a cautious and deliberate approach. Libraries may remain at the forefront of technological innovations and offer improved services to their communities by appropriately embracing ChatGPT.

REFERENCES

[1]. Aithal, S., & Aithal, P. S., (2023). Effects of AI-Based ChatGPT on Higher Education Libraries. Int. Jr. of Mgt., Technology, and Social Sciences (IJMTS), 8(2): 95-108. DOI: https://doi.org/10.5281/zenodo.7905052.

[2]. Acheampong,E, and Agyemang,F.G.(2021), Enhancing academic library services provision in the distance learning environment with M-technologies, *The Journal of Academic Librarianship*,47 (1): 42-49.

[3]. Hamad et al. (2018),Mobile learning for the 21st century librarian, *Reference Service Review*,11(2): 66-74.

[4]. Liu, Y. Q., & Briggs, S. (2015). A library in the palm of your hand: mobile services in top 100 university libraries. Information technology and libraries, 34(2), 133-146.

[5]. Mishra, A. (2017). Mobile App and the library services. *International Journal of Computer Trends and Technology (IJCTT)*, 49 (2):106-114.

[6]. Saxena, K. & Sharma, S. (2024, January). ChatGPT : A Game Changer in Research and Higher Education, University News, 62(03): 51-55.

[7]. Sharma and Sahoo (2014). Developing and completing a library mobile technology survey to create a user-centered mobile presence. Library Hi-Tech. 39(2): 112-119.

[8]. Sohail, Nadeem Mobile App for Library Services [PowerPoint slides]. https://www.zoho.com/creator/apps/library-management.html.

[9]. T, Manjula. (2019). Library mobile apps: for effective services of library. 5: 17-31. https://rubygarage.org/blog/mobile-app-vs-mobile-website.

[10]. https://blog.librarything.com/thingology/2012/03/custom-branded-library-apps/.

[11]. https://www.capiratech.com/capiramobile.

[12]. https://www.oclc.org/en/capira.html.

[13]. https://about.proquest.com/products-services/Library-Anywhere.htm.

[14]. https://analyticsindiamag.com/9-groundbreaking-gpt-based-models-developed-in-india/.

[15]. https://en.wikipedia.org/wiki/ChatGPT.

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