

Applications of AI in Farm Science Libraries

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OPEN ACCESS

Keywords

AI, Farm Sciences, Research, Innovation, Library

How to cite this article:

Subramani, M. K. and Ali, S. 2024. Applications of AI in Farm Science Libraries. *Vigyan Varta* 5(2): 43-45.

ABSTRACT

Artificial Intelligence, indeed encompasses the development of computer systems capable of performing tasks that traditionally require human intelligence. This field aims to create machines and software with the ability to learn from experience, reason through complex problems, understand natural language, recognize patterns, and adapt to diverse situations. This article enlightens the importance of AI, its functional applications and integrations in the farm science libraries. The integration of AI in farm science libraries contributes to the modernization of agricultural information management, supports precision farming, and enhances the overall efficiency and effectiveness of agricultural research and practices. It plays a pivotal role in advancing the field of agriculture by making valuable data more accessible and actionable.

INTRODUCTION

AI, or Artificial Intelligence refers to the development of computer systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, speech recognition, and language understanding. The goal of AI is to create machines or software that can exhibit intelligent behavior and adapt to different

situations. The field of artificial intelligence began to take shape in the 1950s, and libraries began to use it in the 1990s (Ajakaye, 2022). Artificial intelligence applications will aid in simulating human decision-making. AI tools are used by library intelligent systems to deliver knowledge-based services to users (Asemi and Asemi, 2018).

Libraries must offer information resources and services that appropriately satisfy the dynamic information needs of the present generation of hyper-connected library patrons if they are to draw in new patrons and maintain their current audiences. The physical layout of the library needs to be reconsidered because it is evolving from a peaceful place to read and write with bookshelves to something completely different. To remain relevant, libraries need to be lively hubs for collaboration and creative endeavors while simultaneously preserving a serene reading area for thoughtful study. This new strategy would view library users as inventors or creators, and the library as a hub for creation or incubation. User spaces would be equipped with futuristic tools and devices such as gamification, virtual reality, 3D printing, flexible displays, media production tools, natural user interfaces, and much more (Oname and Alex-Nmecha, 2020). As technology continues to advance, the integration of AI in libraries is likely to evolve, offering new possibilities for enhancing user experiences and optimizing library operations.

The integration of AI in farm science libraries holds significant importance due to its potential to revolutionize the way agricultural information is managed, accessed, and utilized. AI integration has potentiality to enhance the efficiency, accessibility, and functionality of these libraries. This advancement can bring about numerous benefits, enhancing and innovating research, data management, and decision-making processes in agriculture and allied sectors.

Some key applications of AI in farm science libraries are:

Automated Data Management: Implement AI systems for the automated organization and categorization of vast amounts of agricultural data, including research papers, reports, and datasets.

Utilize natural language processing (NLP) algorithms to extract key information from textual content, making it easier to search and retrieve relevant information.

Precision Agriculture: Integrate AI algorithms for precision agriculture applications, such as satellite imagery analysis, crop monitoring, and yield prediction. Provide access to AI tools that help farmers make data-driven decisions, optimizing resource use and increasing productivity.

Recommendation Systems: Develop recommendation systems powered by AI to suggest relevant research articles, publications, or datasets based on user preferences, search history, and current trends in farm sciences.

Chatbots and Virtual Assistants: Implement chatbots or virtual assistants that use AI to provide quick and accurate information to library users, answering queries related to agricultural research, farming practices, or library resources.

Machine Learning for Research Insights: Apply machine learning algorithms to analyze research trends, identify patterns in scientific literature, and generate insights that can inform future research directions.

Automated Literature Reviews: Use AI to automate the process of conducting literature reviews by extracting and summarizing key information from a large number of research papers, helping researchers save time and stay updated on the latest advancements.

Smart Document Annotation: Implement AI-driven annotation tools that can automatically identify and highlight important concepts, keywords, or findings in research documents, making it easier for users to grasp essential information.

Predictive Analytics for Crop Diseases:

Develop predictive analytics models using AI to anticipate and mitigate the impact of crop diseases. This can help farmers and researchers take proactive measures to protect crops.

Collaborative Filtering for Research

Collaboration: Use collaborative filtering techniques to recommend potential research collaborators based on the expertise and interests of researchers within the farm sciences community.

Facial Recognition for Security:

Implement facial recognition systems to enhance the security of the library and its resources, ensuring that only authorized individuals have access to sensitive information.

Automated Report Generation:

Utilize AI to automate the generation of reports, abstracts and summaries based on agricultural research findings, making it easier for researchers to communicate their results effectively.

Continuous Learning Platforms:

Provide access to AI-driven continuous learning platforms that offer personalized training and development opportunities for individuals in the agricultural sector, helping them stay updated on the latest technologies and methodologies.

Smart IoT Integration:

Integrate AI with Internet of Things (IoT) devices to collect and analyze real-time data from agricultural

sensors, weather stations, and other IoT devices, providing valuable insights for researchers and farmers.

CONCLUSION

By incorporating these AI applications, farm sciences libraries can significantly enhance their capabilities, fostering innovation and collaboration within the agricultural research community. However, it is essential to approach the integration of AI in farm sciences libraries with a user-centric focus, ensuring that these technologies enhance the overall experience and contribute to the advancement of agricultural knowledge and practices.

REFERENCES

- Ajakaye, J.E. (2022). Applications of Artificial Intelligence (AI) in Libraries. In *Handbook of Research on Emerging Trends and Technologies in Librarianship*. IGI Global. pp. 73-90.
- Asemi, A. and Asemi, A. (2018). Artificial Intelligence (AI) application in Library Systems in Iran: A taxonomy study. *Library Philosophy and Practice*, 2.
- Omame, I.M. and Alex-Nmecha, J.C., 2020. Artificial intelligence in libraries. In *Managing and adapting library information services for future users*. IGI Global. pp. 120-144.