Edmund Balnaves

18 Artificial Intelligence in Library Services: An Introductory Overview

In the 1990s, the library management system (LMS) reigned supreme as the expression of information technology in the library. It was the culmination of many years of evolution in automation of library service delivery. The internet and the evolution of online search and discovery, exemplified by Google, represented the first in many transformations that have seen information usage migrate wholesale to electronic and online delivery. The technological landscape for libraries has seen rapid transformation rapidly since the turn of the century.

New categories of library services have emerged to support the role played by libraries in a radically online era. The evolving services include discovery systems grounded in massive electronic journal resources, research management systems, digital library systems, and digital repositories. The integration of library systems with other services such as the learning management system has become integral to library service delivery.

The emergence of open source as a rival to traditional commercial software delivery has impacted many library services. The open-source LMS, Koha, originated in New Zealand in 2000, the same year which saw the emergence of the open-source DSpace digital library system and several other key software services used by libraries. Koha, like other open-source software, has a large, diverse, international community of contributors, service providers and libraries adopting the system.

Artificial intelligence (AI) has represented another change in the library information technology landscape and has seen like other software developments within libraries the use of open source. Open source has been central to innovation within AI. Most of the earliest toolkits for AI were developed in open source, most notably in the Python programming language.

Client behaviour has dramatically changed in recent years, and the era of AI has raised a new set of expectations about the capabilities of libraries to deliver information resources that make best use of technology available. User experience (UX) techniques focusing on the interaction between the user and a service provider has shaped new services being provided.

Finally, the emergence of cloud computing has provided a platform for rich technological resources as a playground for innovation and service delivery. The availability of highly proficient cloud services has opened up opportunities for library service delivery.

Libraries are engaging with the various new technologies by use of cloud service delivery and integration using application programming interfaces (APIs). The API has become central in cross integration of the many services the library now manages. The long history of strong standards in the library community has fostered the rapid evolution of integrated services.

This section explores the ways in which libraries can engage with the emerging services using AI in libraries. Patrich Cher from the National Library Board Singapore explores the integration of ChatGPT using APIs and its own custom knowledge base. Imam Khamis explores the elements of building AI in libraries. Helen Cheung, Alex Chan and Kenny Kwan from the HKSKH Minghua Theological College explore the ways in which AI games can be deployed in learning AI literacy. Itai Veltzman and Rael Elstein discuss the integration of AI into the Ex Libris platform. Finally, Edmund Balnaves provides an illustrated journey in the playground of AI facial recognition tools in the context of library services.

This section provides a taste of the ways in which AI is already used in library services and an insight into the ways in which the AI toolset can be applied and explored in the delivery of library services. AI will increasingly be present across many of the software platforms that the library deploys, whether the libraries have introduced it themselves or applied software received via commercial or open-source systems implementation. Whichever way AI reaches the library, this book provides a solid introduction to librarians seeking to prepare the library to engage with a new era of software.