


Chapter 8

Artificial Intelligence in Libraries

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ABSTRACT

Artificial intelligence (AI) is one of the emerging trends and applications of computing in libraries. It involves programming computers to do things, which if done by humans, would be said to require intelligence. The ultimate promise of artificial intelligence in libraries is to develop computer systems or machines that think, behave, and in fact rival human intelligence, and this clearly has major implications on librarianship. The application of artificial intelligence in the library has become pervasive. They include expert systems for reference services, book reading and shelf-reading robots, virtual reality for immersive learning among others. Although the incorporation of artificial intelligence in libraries can be perceived to alienate librarians from their users, it will probably help libraries do more rather than taking over the jobs of librarians. It will enhance their services delivery. Artificial intelligence will greatly improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society.

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INTRODUCTION

Intelligence is the ability to think and learn facts and skills and also apply them when necessary. The prospect of developing computers or machines that perceive, learn, reason and behave like human beings has fascinated many people. Humans are born with an innate ability to perceive, reason/think and act, which develops and improves over time as a result of so many factors. Intelligence in humans is measured by the Intelligence Quotient (IQ) obtained through series of aptitude test focusing on different aspects of intellectual functioning. Similarly, developing intelligent computers that perceive, think and behave like humans is the crux of Artificial Intelligence. Intelligence in computers or machines depicts their ability to accomplish specific task in the presence of variability and monitor its environment and appropriately adjust its actions based on what it has sensed as prerequisites for intelligence. Intelligences in machines is an anthropomorphism in that intelligence is defined by the criterion that the actions would appear intelligent if a person were to do it (McGraw-Hill Encyclopedia of Science and Technology, 2007). According to Ex Libris (2019), intelligence in machines not only gives such devices the ability to learn but they are also configured to improve with use to perform functions better without being explicitly programmed because they are built to recognize and imbibe patterns efficiently on much higher scales than humans.

Artificial intelligence already touches many of our daily computing activities, most of the computer systems and mobile phones being developed today have artificial intelligence features and we have probably used them not knowing that they are intelligent machines. Examples of Artificial intelligence in computers are speech recognition, natural language processing, self-driving or autonomous cars, machine learning, deep leaning and robotics. Artificial intelligence works based on perceptual recognition unlike human beings that operate on deep cognition. The power and advantage of Artificial intelligence lies in the fact that computers can recognise patterns efficiently at a scale and speed that human beings cannot.

The development of societies in recent times have been facilitated by the growing demand of access to information, and libraries are the prime source in providing this access. The paradigm shift in the format and dynamics of information and knowledge as a result of the rapid advancement in computer technology and software applications especially artificial intelligence, have shifted libraries to a demand of the commensurate supply of the same technologies. Unless libraries begin to exploit the new technologies and innovate their information and services delivery, they may face obsolescence in this era.

Artificial intelligence is used in many areas such as medicine, military, business, education, gaming, libraries etc. The idea of creating artificial intelligence systems in libraries dates back to 1990. These intelligent library systems provide knowledge-

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