Chapter 4
Artificial Intelligence in Higher Education and Learning

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ABSTRACT

Artificial intelligence is an emerging technology that is popular in education technology. AI plays a vital role to e-teaching and e-learning in higher education. In this chapter, a major focus is on exploring the wonders of the development of AI in higher education for teaching and learning processes. It analyses the educational ramifications of rising innovations in transit student learning and how organizations instruct and develop. Late inventive degrees of progress and the accelerating new headway in cutting edge training are researched to predict the future thought of cutting-edge instruction in all actuality. The role of AI in higher education is presented in detail by systematic review.

INTRODUCTION

Artificial intelligence (AI) is a division of science that is related withdeveloping smart computational machines that is capable of carry out tasks in the same manner as human intelligence. AI is an interdisciplinary region of science that can be applied

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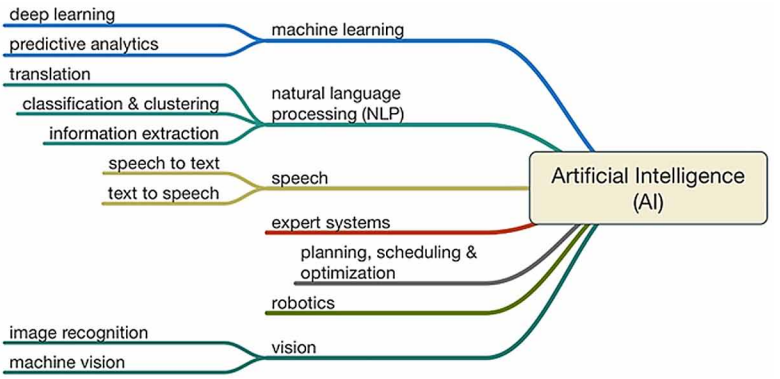
to various different discipline of different research area. Machine learning and deep learning are the parts of AI that play important role in visualizing different concepts of research area (Russell and Norvig 2002).

In 1956, John McCarthy presented the term, "artificial intelligence". McCarthy is known as "Father of AI". McCarthy, along with other scientists from IBM, Bell Labs, and Harvard, built the theory of programming machines to utilize language and resolve problems while progressing over time (Buchanan 2005).

ARCHITECTURE OF AI

Fig. 1 shows the usefulness of AI in different area. The major research area includes are speech, natural language processing, expert system, robotics, vision, scheduling, optimization, machine learning etc.

Figure 1. Architecture of AI
(Lucas 2017)



COMPONENTS OF AI

The following are the major components of AI (Arrieta et al. 2020):

1. *Fairness*: Trained data and models should be utilized to avoid unfair action of certain clusters.
2. *Robustness*: Safety and security are important factors while applying AI concepts.