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The Domains of Artificial Intelligence



LEARNING OUTCOMES

At the end of the chapter, students will be able to:

- ▶ Compare the various domains of Artificial Intelligence
- ▶ Machine Learning
- ▶ Outline about Natural Language Processing (NLP)
- ▶ Explain about Computer Vision
- ▶ Elaborate about Robotics
- ▶ Outline about Expert Systems
- ▶ Distinguish the nature of Fuzzy Logic
- ▶ Identify the importance of Deep Learning
- ▶ Summarise the uses of some other domains of AI

CHAPTER NOTES

- ▶ Artificial Intelligence at its most straightforward, is intelligence exhibited by appliances.
- ▶ Artificial Intelligence encompasses a wide range of domains, each playing a crucial role in advancing our technological capabilities.
- ▶ The domains of artificial intelligence are majorly categorised into:
Machine learning, Natural language processing, Computer vision, Expert systems, Robotics, Fuzzy logics and Deep learning.
- ▶ Machine learning enables computers or machines to make data-driven decisions rather than being explicitly programmed for a certain task.
- ▶ Virtual assistants like Siri and Alexa utilise NLP to process voice commands and provide informative responses.
- ▶ Computer Vision revolves around the development of algorithms and models that enable computers to perceive and interpret visual information from images or videos.
- ▶ Robotics is a branch of engineering that involves the conception, design, manufacture, and operation of robots.
- ▶ Expert Systems mimic the decision-making capabilities of human experts in specific domains.
- ▶ AI robots are able to execute the coded logics and output one true or false statement or action.
- ▶ Deep learning is artificial intelligence (AI) function that imitates the working of the human brain in processing data and creating patterns for use in decision-making.