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Affiliations: Affiliation, Affiliation, Affiliation

All Authors Email ID: abc@gmail.com, pqrs@gmail.com, xyz@gmail.com

All Authors ORCID IDs: [https://orcid.org/0000-](https://orcid.org/0000-0302-1351-237), [https://orcid.org/0000-0-](https://orcid.org/0000-0012-1352-4372), <https://orcid.org/0000-0>

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Preface

This book offers a comprehensive exploration of the evolving landscape of machine learning (ML) and deep learning (DL). It begins with a detailed overview of modern architectures and trends in Chapters 1-3, ………..

Author Name

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# **Chapter 1: Artificial intelligence and machine learning**

1 Introduction **(Size 11 & bold)**

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These technologies adoption and expansion have been accelerated by the rapid advancement of processing power and the wealth of available data (Shinde & Shah 2018; Shrestha & Mahmood, 2019; Dargan et al., 2020). The ML and DL architectures, which are the foundation of these technologies, have made significant progress and shown remarkable capabilities in tasks such as natural language processing, autonomous systems, and image and audio recognition. ML models come in a variety of architectures, from basic linear regression models to intricate neural networks, designed for different tasks and types of data (Chauhan & Singh, 2018; Sengupta et al., 2020; Alzubaidi et al., 2021).



**Fig. 1.1** Use styles for **QUICK formatting** Chapter title, Authors Name, Sections, Sub-section, and Body Text

1.1 Artificial In**telligence**

Table 1.1 shows the key architectural innovations and enhancements in ML and DL.

1.2 Machine Learning

Table 1.1 shows the key architectural innovations and enhancements in ML and DL.

## 2 **Literature** review

Fig. 1.1 shows the co-occurrence analysis of the trending keywords in ML. Table 1.1 shows the key architectural innovations and enhancements in ML and DL. Ensure that all tables and figures are properly cited within the text.

## 3 **Methods and materials**

Fig. 1.1 shows the co-occurrence analysis of the trending keywords in ML. Table 1.1 shows the key architectural innovations and enhancements in ML and DL.

## 4 Results and discussions

Fig. 1.1 shows the co-occurrence analysis of the trending keywords in ML. Table 1.1 shows the key architectural innovations and enhancements in ML and DL.

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**Fig. 1.1** Page size



**Fig. 1.2** Page margin

**Table 1.1** Key architectural innovations and enhancements in ML and DL. Text within tables should be set in size 10.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **References** | **Architectural Innovation** | **Description** | **Enhancements** | **Key Applications** |
| 1 | (Shrestha & Mahmood, 2019; Aziz et al., 2020; Deng, 2014) | Convolutional Neural Networks (CNNs) | A category of deep neural networks predominantly employed for scrutinizing visual stimuli. | Noteworthy advancements encompass. | Disciplines of interest encompass.  |
| 2 | (Alzubaidi et al., 2021; Janiesch et al., 2021; Wu & Xie, 2022) | Recurrent Neural Networks (RNNs) | Neural network architectures characterized  | Distinctive enhancements embrace proficient handling of sequential datasets. | Application domains. |

## Conclusions

Transformer-based models such as BERT have caused a significant change in the field of NLP and consistently establish higher levels of performance. These models use self-attention mechanisms to better capture contextual information compared to traditional RNNs and CNNs.

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