

A Technical Significance and Various Application of Deep Learning

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ABOUT THE STUDY

Deep Learning, on the other hand, is a subset of Artificial Intelligence and deep learning is a subset of Artificial Intelligence. Artificial Intelligence (AI) is a broad phrase that refers to methods that allow computers to emulate human behaviour. All of this is made possible through machine learning, which is a set of algorithms taught on data. The design of the neural network is influenced by the structure of the human brain. The same processes that our brains use to find patterns and classify different sorts of data may be used to classify data.

Individual layers of neural networks can be considered as a type of filter that works from the most apparent to the smallest objects, increasing the possibility of detecting them. The human brain operates in a similar way. When we get new knowledge, our brain attempts to compare it to previously encountered objects. The same technique is used in deep neural networks. This may use neural networks to accomplish a variety of tasks, such as sorting, classification and regression. Neural networks can be used to group or classify unlabeled data based on sample similarities. Alternatively, in the instance of classification, we can train the network on a labelled dataset in order to categorize the samples in the dataset.

In general, neural networks can execute the same tasks as standard machine learning techniques. It is not, however, the other way around. Deep learning models can solve challenges that machine learning models can't. Deep learning models can resolve issues that machine learning models can't. Artificial neural networks have unique qualities that allow deep learning models to manage tasks that machine learning models can't. All recent advancement in Artificial Intelligence can be attributed to deep learning. Self-driving cars, chatbots and personal assistants like Alexa and Siri would not exist without deep learning.

Netflix or Youtube would have no notion what movies or TV shows we like or detest and the Google Translate app would remain as basic as it was ten years ago (before Google transitioned to neural networks for this app). Neural networks are at the heart of all of these innovations. Deep learning is, at the end of the day, the greatest and most evident approach to actual machine intelligence we've got thus far.

Applications of deep learning at work

Deep learning algorithms are employed in a variety of industries, including automated driving and medical equipment.

Automated driving: Deep learning is being used by automotive researchers to detect components such as stop signs and traffic lights automatically. Furthermore, deep learning is employed to identify pedestrians, which aids in the reduction of accidents.

Aerospace and defense: Deep learning is used to identify objects from satellites that pinpoint regions of interest and to determine if troops are in safe or risky zones.

Medical research: Cancer researchers are employing deep learning to detect cancer cells automatically. UCLA researchers created a high-dimensional data set that was used to build a deep learning algorithm that could accurately identify cancer cells.

Industrial automation: Deep learning is helps in enhancing worker safety around heavy machinery by recognising whether people or objects are within an excessive distance of the machines.

Electronics: In automated hearing and voice translation, deep learning is applied. Deep learning applications, for example, are used to power home help gadgets that respond to your voice and remember your preferences.

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Received: November 08, 2021; **Accepted:** November 22, 2021; **Published:** November 29, 2021

Citation: Elote S (2021) A Technical Significance and Various Application of Deep Learning. J Inform Tech Softw Eng. 11: 275.

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